



REMARKS

Specification

Applicants have corrected two typographical errors in the specification.

Objections and 35 U.S.C. 112, second paragraph Rejections of Claims

Applicants have amended the claims to address all of the Examiner's objections and rejections to the claims under 35 U.S.C. 112, second paragraph. Specifically, the preamble of claims 1 and 10 have been amended, the term "its" in claims 2 has been clarified, and the antecedent basis problems in claims 4 and 7 have been corrected. Although the Examiner's comments mentioned claims 2 and 6, Applicants have assumed that these were typos and that the Examiner intended to refer to claims 1 and 7 respectively. Applicants respectfully note that all of the amendments made to the claims were to address these minor issues under 35 U.S.C. 112, second paragraph.

35 U.S.C. 103(a) Rejection of Claims

Applicants respectfully assert that the claims as originally filed, and as presently pending, are allowable over the prior art of record. Applicants agree with the Examiner that Olafsson (U.S. Pat. 6,163,570) does not explicitly teach the "adjusting" steps of claim 1 and claim 10. Specifically, the "adjusting" step of claim 1 requires "adjusting the transmit power level of the analog modem in accordance with the difference between the detected transmit power level and a desired transmit power level" and the "adjusting" step of claim 10 requires "adjusting the transmit power level at the modem in accordance with the difference between the detected transmit power level at the modem and a desired transmit power level". However, Applicants respectfully disagree with what the Examiner asserts a person of ordinary skill in the art would do. Applicants respectfully assert that a person of ordinary skill in the art would proceed just as the inventors in Olafsson did: namely the constellation set would either be discarded or modified until an acceptable constellation was obtained (i.e. a trial and error approach). See Olafsson, col. 6, lines 24-27; col. 7, lines 55-59; col. 11, lines 30-35; and diamond 416 and box 418 in FIG. 4. The present invention does not waste the time and resources of a trial and error approach, but instead makes a direct adjustment of the transmit power level based on the difference between the detected and desired transmit power level. Olafsson does not suggest the present invention, but in fact teaches away from the present invention by teaching a trial and error approach. Applicants respectfully assert that

the dependent claims add further limitations to independent claims 1 and 10 are allowable for at least the same reasons as described herein.

No amendment made herein was related to the statutory requirements of patentability. No amendment made was for the purpose of narrowing the scope of any claims.

Applicants believe the application is in condition for allowance which action is respectfully solicited. Please contact me if there are any issues regarding this communication or the current Application.

Respectfully submitted,

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Date

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PARAGRAPHS - VERSION WITH MARKINGS TO SHOW CHANGES MADE

4th paragraph on page 11, beginning at line 11:

What has been described is one of the ways by which the analog modem transmit power level can be adjusted. It should be noted that the transmit power level is also determined by the transmit constellation. However, the transmit constellation itself is hard to change to obtain different upstream transmit powers, since its modification will change the error probability of the upstream receiver. Therefore, in general, only mapping [paramenters] parameters are modified to change upstream transmit power.

2nd paragraph on page 12, beginning at line 6:

In the above section a technique for PCM downstream spectral shaping or precoding of data signals is described. In this section there is described a precoding technique for PCM upstream [pecoding] precoding of data signals.

CLAIMS - VERSION WITH MARKINGS TO SHOW CHANGES MADE

1(Once Amended). In a PCM modem system including an analog modem[,] coupled to a digital modem, [a local analog loop, a central office, a digital network and a digital modem,] a method for controlling the transmit power of the analog modem, comprising the steps of:

detecting the transmit power level of the analog modem; and,
adjusting the transmit power level of the analog modem in accordance with the difference between the detected transmit power level and a desired transmit power level.

2(Once Amended). The method of Claim 1, wherein the analog modem sets [its] the analog modem's own transmit power level.

3. The method of Claim 1, wherein the transmit power level of the analog modem is set by the digital modem.

4(Once Amended). The method of Claim 3, wherein the PCM modem system adjusts the power level of the analog modem by transmitting mapping parameters including [the] equivalence classes used in the analog modem and wherein the transmit power level is proportional to the number of equivalence classes.

5. The method of Claim 4, wherein the digital modem sets the analog modem transmit power by changing the number of equivalence classes employed.

6. The method of Claim 5, wherein the digital modem estimates the transmit power of the analog modem during a startup mode.

7(Once Amended). The method of Claim 6, and further including the step of transmitting the difference between the detected power level and the desired power level to the digital modem for use by the digital modem in changing the number of equivalence classes

employed, thus to adjust the power level of a transmitting portion of the analog modem [transmitter].

8. The method of Claim 1, wherein the adjustment of the transmit power level of the analog modem is such as to maintain the transmit power level within FCC set limits.

9. The method of Claim 1, wherein the adjusted transmit power level at the analog modem optimizes the PCM modem system by minimizing echo power to minimize noise components due to imperfect echo cancellation and by minimizing non-linearities and downstream performance degradation.

10(Once Amended). In a PCM modem system including an analog modem[,] coupled to a digital modem, [a local analog loop, a central office, a digital network and a digital modem,] a method for controlling the transmit power of either of the modems, comprising the steps of:

detecting the transmit power level of a modem; and,
adjusting the transmit power level at the modem in accordance with the difference between the detected transmit power level at the modem and a desired transmit power level.

11. The method of Claim 10, wherein the transmit power level of the modem is set by the other of the modems.